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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/508,745

09/21/2004

Robertus Adrianus Maria Wolters

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02/21/2006

PHILIPS ELECTRONICS NORTH AMERICA CORPORATION
INTELLECTUAL PROPERTY & STANDARDS
1109 MCKAY DRIVE, M/S-41SJ
SAN JOSE, CA 95131

EXAMINER

ARENA, ANDREW OWENS

ART UNIT

PAPER NUMBER

2811

DATE MAILED: 02/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/508,745

Applicant(s)

WOLTERS ET AL.

Examiner

Andrew O. Arena

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.

- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis (US 6,137,173) – hereinafter Davis.

3. Regarding claim 1, Davis discloses (Fig 15-17) a semiconductor device (col 4 In 37) comprising:

a substrate (400; also Fig 10: 230 or Fig 14: 320) with a first (430) and an opposed second (460) side,

at which first side a plurality of transistors and interconnects is present (col 3 In 31-38, col 4 In 10-14), which are covered by a protective security covering (250),

which device is further provided with bond pad (410) regions,

characterized in that the protective security covering comprises a substantially non-transparent (col 1 In 8-10, 32-37, col 2 In 19-21) and substantially chemically inert security coating (col 2 In 64 - col 3 In 3), and

the bond pad regions are accessible from the second side of the substrate (510).

4. Regarding claim 2, Davis discloses (Fig 15):

the bond pad regions are present on the first side (430, which is taken to include the sidewalls and bottom of trenches 440 in side 430) of the substrate, and

the substrate is a silicon substrate (col 3 ln 12, 28-33), that is patterned (440, 510) as required for access to the bond pad regions.

5. Regarding claim 3, Davis discloses (Fig 17) a security layer (540) is present at the second side of the substrate, which security layer leaves exposed any metallization (530) for access to the bond pad regions.

6. Regarding claim 4, Davis discloses (Fig 17) the bond pad regions are protected against probing (broadly interpreted as contacting with some probe tip) with antiprobe means (layer 250 prevents contact with bond pads 410).

7. Regarding claim 5, Davis does not limit his security coating layers to any particular number or material (col 5 ln 5-12), therefore his disclosure encompasses all well-known security coating layers, including a layer of TiO_2 .

8. Regarding claim 6, Davis discloses the security coating is formed of multiple alternate layers (col 5 ln 5-12, col 3 ln 55-61), which alternate layers are sensitive to different etchants (different layers are inherently sensitive to different etchants).

9. Regarding claim 7, Davis discloses (Fig 17) a carrier (250) comprising a semiconductor device according to claim 1.

Response to Arguments

10. Examiner concurs that a drawing is not necessary for the subject matter of the antiprobng feature (claim 4; spec pg 3 ln 3-24) and the security layer present at the

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second side (claim 3; spec pg 3 ln 25-33). Examiner notes a drawing illustrating said features would, however, greatly aid in understanding applicant's claimed invention.

11. Applicant's arguments filed 12/21/2005 have been fully considered but they are not persuasive.

12. Examiner does not concur with applicant's allegation that "the claimed feature of 'the protective security covering comprises a substantially non-transparent and substantially chemically inert security coating' is not disclosed." As noted in the office action dated 11/30/2005, Davis discloses a security coating (250; col 4 ln 50-52) that is not limited to a particular material (col 4 ln 52-54). As noted in this office action, Davis discloses reduced susceptibility to physical analysis (col 2 ln 19-21), including lasers (col 1 ln 34). Therefore, Davis discloses a security coating that is substantially non-transparent (has reduced susceptibility to optical laser analysis). Davis discloses a substantially chemically inert security coating (col 2 ln 66 – col 3 ln 3).

Conclusion

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

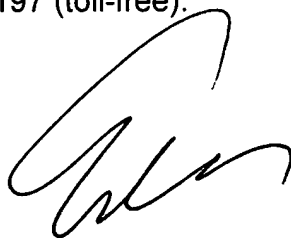
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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is (571) 272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



EDDIE LEE
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800